15 Points
OF
IRON FIREMAN SUPERIORITY

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IRON FIREMAN *Automatic Coal Burner*, the machine that made coal an automatic fuel. Years ahead in design, construction and performance.

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THE IRON FIREMAN
TRADE MARK
REG. U.S. PAT. OFF.

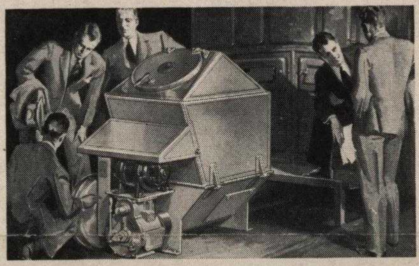
15 Points of IRON F

1 Pressed Steel Construction

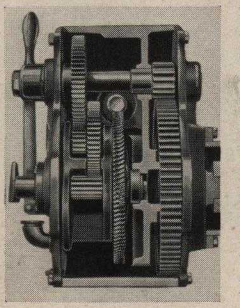
Pressed steel construction is the accepted standard for automatic coal burners as it is for refrigerators, automobiles and Pullman cars. This construction is strong, light, durable and crack-proof, largely because of the inherent advantages of this uniform material and the method of fabrication. Iron Fireman utilizes this construction whenever possible.

2 Balanced Design

The success of any machine is based upon the successful performance of every one of its parts. Like a chain, no machine is stronger than its weakest link. Every unit of the Iron Fireman is not only balanced and perfected in itself, but is also balanced in its relation to the other parts, and so makes the complete stoker a perfectly balanced operating unit.



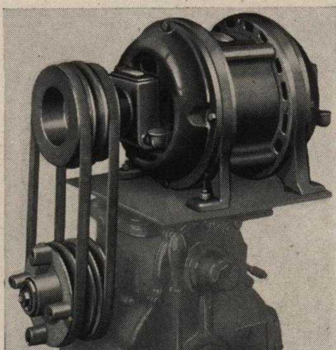
3 Iron Fireman *Transmission*



The Iron Fireman speed reduction unit and its patented speed change gears are an exclusive Iron Fireman development and make an ideal transmission for automatic coal burners. This transmission drives the feed worm at a constant speed which in turn feeds the coal to the fire in a slow, steady stream at the required rate for proper burning. As a result, a steady, non-agitated fire is obtained. This transmission has three speeds and three neutrals. The gears can be shifted while the stoker is in operation; in fact more easily than when the stoker is idle, and it is impossible to strip the gears while shifting. All the gears operate in a bath of lubricating oil and the unit is most quiet, as a demonstration will prove. In design, materials and precision of construction, the Iron Fireman transmission is like that of a fine automobile.

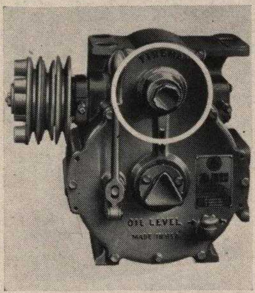
4 Duo-Purpose "V" Belt Drive

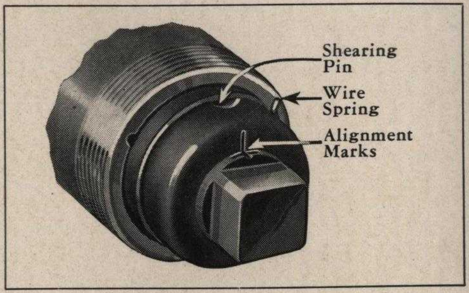
"V" belt drives are the latest development in power transmission and they have many desirable qualities. They combine flexibility with ease of alignment, freedom from vibration, long life, and quiet operation. Iron Fireman uses this type of drive to obtain these desirable results and most models make use of an added V-belt application. They are equipped with two belts; one to drive the transmission and one to drive the fan, which rotates on ball bearings, independent of the main drive shaft. This makes a very flexible additional application, since the fan can thus be run at a speed independent of that of the feed worm transmission, and its air output can be exactly balanced to the amount of coal consumed.



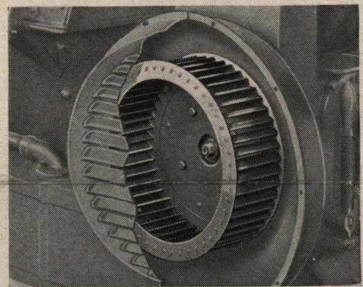
5 Safety Overload Device

Emergencies occasionally arise when an overload device is needed on a stoker; a railroad spike is sometimes thrown into the coal reservoir with the coal, finds its way into the feed worm, and may become lodged at the entrance to the worm housing. In such cases a safety shear pin automatically shears, thus giving positive protection to the stoker mechanism. It is a simple matter to remove the railroad spike or other foreign object on the rare occasions when it gets into the coal supply. The safety shear pin serves the same basic purpose as the ordinary fuse plug in an electrical circuit and it is just as easy to replace. While this simple overload device may never be needed, it continually stands guard against costly breakage and resulting boiler shutdown.





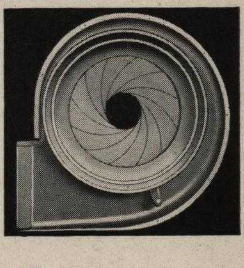
6 Centro-Balanced Rotor Fan



Air is supplied to the fire by a highly efficient centro-balanced rotor fan, especially designed by Iron Fireman engineers and produced in the Company's own plant. It is accurately balanced to eliminate vibration and is compact, durable and quiet in operation. The fan is inclosed in the pressed steel fan housing designed and made by Iron Fireman exclusively for Iron Fireman fans.

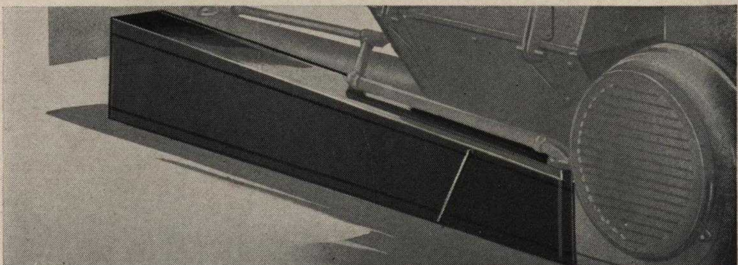
7 Iris Air Regulator with Louver Guard

The models of Iron Fireman which need especially close air adjustment are equipped with an iris air intake regulator. The adjusting sectors of this regulator are made from non-corrosive metal, are built as accurately as the iris diaphragm on a fine camera, and operate in the same manner. The air opening can be finely adjusted to any diameter. The regulator and fan are protected from injury by a carefully designed louver guard which gives full protection with a negligible resistance to the flow of air.



8 Automatic Fire Banking Damper

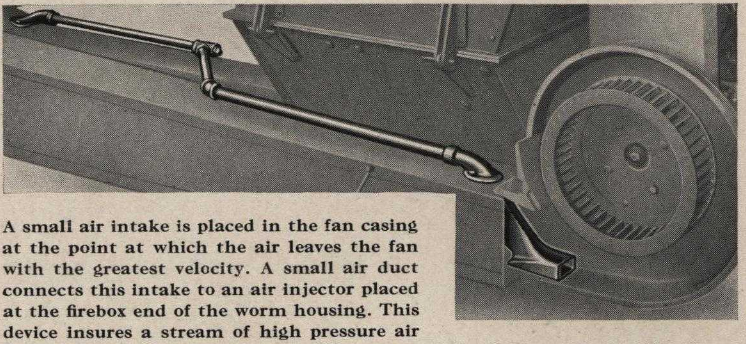
Located in the steel air duct, through which air moves from the fan outlet to the air chamber, is a device somewhat similar to a check valve. This acts as an automatic fire banking damper. When the stoker is in operation, this damper is held open by the flow of air, but automatically closes the air passage when the stoker stops. It thus holds the fire in the proper condition for good combustion when heat is again required, and between periods of operation conserves fuel by allowing the burning of only a minimum amount of coal in the banked fuel bed.



Years ahead in Design,

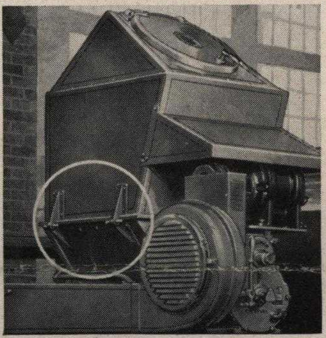
IREMAN *Superiority*

9 *Positive Pneumatic Fume Eliminator*



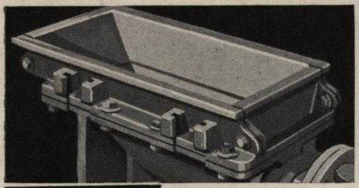
A small air intake is placed in the fan casing at the point at which the air leaves the fan with the greatest velocity. A small air duct connects this intake to an air injector placed at the firebox end of the worm housing. This device insures a stream of high pressure air flowing into the worm housing at all times, and thereby creates a positive movement of coal fumes through the fuel in the bottom of the retort. It prevents any fumes from flowing back through the worm housing to the fuel reservoir, thence into the furnace room.

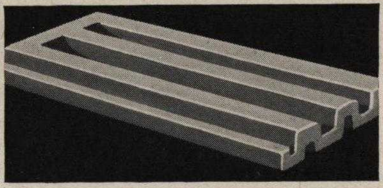
10 Iron Fireman *Coal Reservoir*



The Iron Fireman coal reservoir is made of heavy gauge copper-bearing, rust-resisting steel. It is scientifically shaped to facilitate free flow of coal to the feed worm. On the larger sizes, these reservoirs are attached by specially designed hinges. These hinges enable the coal reservoir to be quickly and easily removed, or, should occasion arise, to be easily swung to one side or the other. On the domestic and smaller commercial models a gas-tight, dust-tight top is available for installations where extreme cleanliness is a factor.

11 Iron Fireman *"Carburetor"*

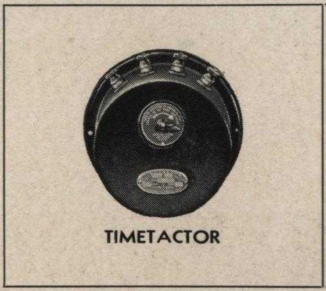




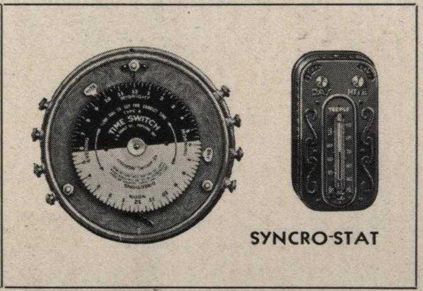
The retort, venturi tuyeres and dead plates constitute the "carburetor" of the Iron Fireman. Within this carburetor coal and air meet and are mixed in the proper proportion to obtain efficient combustion when they enter the heat zone. In this part of the stoker, design, material and construction meet the acid test. The retort on the larger sizes is made in sections which are especially designed to allow for differences in expansion due to heat. All of these parts are the result of years of development work by Iron Fireman engineers in the laboratory and in the field.

13 The Iron Fireman *Automatic Directing Controls*

Iron Fireman starts and stops at the command of sensitive, accurate, automatic controls, which are made for the exclusive use of the Iron Fireman. Directing controls, or the "brains" of Iron Fireman, govern stoker operation according to demands of time, temperature, or pressure. An example of the superiority of the Iron Fireman directing controls is the "*Syncro-Stat*." This instrument provides automatic control of day and night temperature. It is powered by a Telechron motor, thus eliminating winding or daily or weekly setting, and making it an accurate all-electric temperature regulator. Other directing controls include the hot water and furnace regulators and the "*Timetactor*," a device which runs the Iron Fireman during predetermined brief intervals in order to keep the fire alive in mild weather.



TIMETACTOR

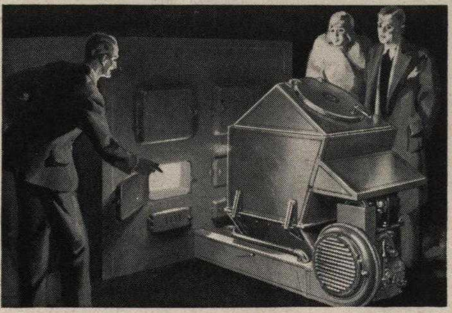


SYNCRO-STAT

14 Iron Fireman *Motor-Driven Operating Controls*

Just as directing controls are the "brains," so the operating controls are the "hands" of the Iron Fireman. The most important unit of the operating control system is the motor-driven relay switch. This device starts and stops the stoker motor at the command of the "Syncro-Stat" or other directing controls. In the case of the larger stokers, a magnetic operating switch works in conjunction with the relay switch. The motor relay switch is the latest development in operating relays. It is silent in operation—consumes a minimum of power—and is thoroughly reliable in operation.

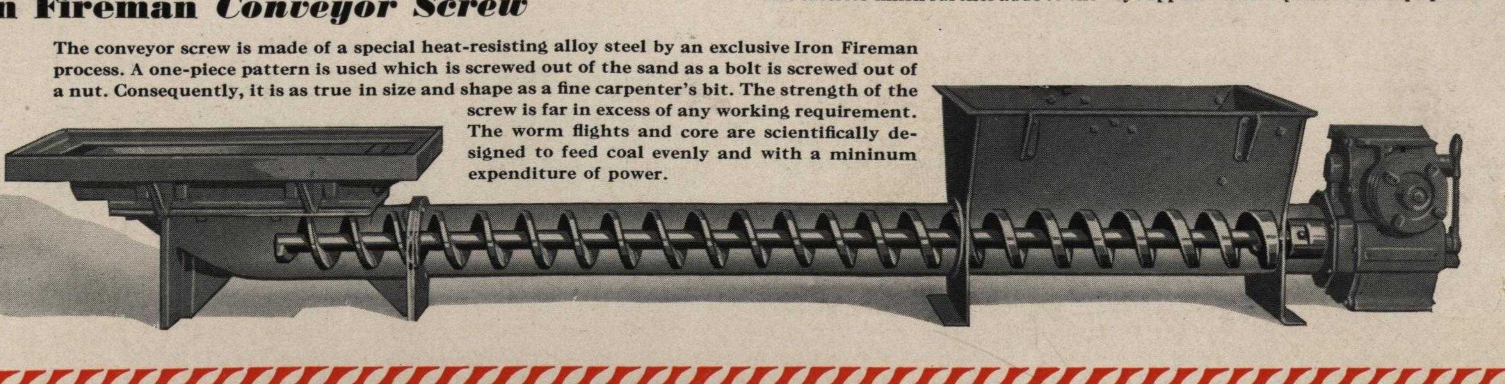
15 *Eye Appeal*



Since time began, the true basis of good looks has been utility. For example, the stream lines of an airplane, a fast ship, or a fine motor car serve a fundamentally useful purpose. Beauty is the result. A clumsy, awkward, crude-looking piece of mechanism usually *operates* in a similar way. Every line, angle, and feature of Iron Fireman construction has utility as its basis. A fine exterior finish further adds to the "eye appeal" of this piece of fine equipment.

12 Iron Fireman *Conveyor Screw*

The conveyor screw is made of a special heat-resisting alloy steel by an exclusive Iron Fireman process. A one-piece pattern is used which is screwed out of the sand as a bolt is screwed out of a nut. Consequently, it is as true in size and shape as a fine carpenter's bit. The strength of the screw is far in excess of any working requirement. The worm flights and core are scientifically designed to feed coal evenly and with a mininum expenditure of power.



Construction, Performance

Section 435½ P. L. & R.

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THE IRON FIREMAN
TRADE MARK
REG. U. S. PAT. OFF.

Plus ADVANTAGES

Product of a Responsible Manufacturer

The Iron Fireman Manufacturing Company is the pioneer and by far the largest manufacturer in its field. When you buy an Iron Fireman you deal with a company of unquestioned financial stability; whose leadership in research, engineering, construction and performance is definitely established.

Monthly Payment Plan

Iron Fireman is easy to buy and easy to pay for on the Iron Fireman deferred payment plan. Fuel and labor savings, plus other economies of operation, will go far toward meeting the monthly payments. After Iron Fireman has paid for itself it will continue to earn extra profits for you through years of efficient, economical service.

Known Value

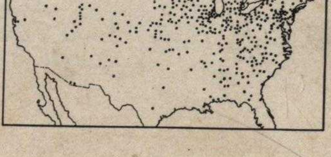
The value of Iron Fireman has been proved in thousands of installations. Users are saving millions of dollars every year through Iron Fireman's ability to (1) cut fuel costs; (2) provide steady, even heat or power; (3) reduce labor costs; (4) eliminate the smoke nuisance.

Universally Used and Successful

There is an Iron Fireman size and model for any type of building or industrial plant, and for every home, large or small. In every section of this vast field Iron Fireman is giving satisfactory service year after year—proving by performance that Iron Fireman is one of the finest investments that can be made in heating or power plant equipment.

Iron Fireman Nation-wide Service

The Iron Fireman engineering and dealer organization is nation-wide. There is a factory trained dealer near you who can accurately survey your plant and who has complete facilities for the quick and proper installation of the Iron Fireman size and model that best fits your needs.



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